



**Model Climate Laws Initiative
Explanatory Memo – Facilitating Plug-In Solar**

This memo accompanies the Model Climate Laws Initiative (MCLI) [model law](#) facilitating plug-in solar. MCLI's model law, entitled the "Plug-In Solar Access and Safety Act," is suitable for consideration and enactment by states.

I. Plug-In Solar Background

Historically, smaller-scale distributed solar-powered generation has generally been rooftop panels or ground-mounted solar arrays. These have a variety of benefits. For example, they can help reduce greenhouse gas and other air pollutant emissions, increase electricity reliability, and result in consumer energy savings and lower electricity bills.

Traditional residential solar, however, can require relatively complicated installation and may have upfront costs that are infeasible for low- and moderate-income households. Moreover, traditional distributed solar may not be available to all household types, including occupants of apartment buildings, renters who do not own the building in which they reside, and others that may lack access or sufficient physical space.

"Plug-in solar" has the potential to offer similar benefits for affordability, reliability, and emission reductions, but without these barriers and limitations. Also commonly referred to as "balcony solar" or "portable solar generation," such systems are generally small photovoltaic systems designed to connect directly into a standard electrical outlet. Typically, they consist of one or two solar panels, paired with an inverter and integrated safety systems.

These systems allow households to generate a modest amount of electricity for on-site consumption, offsetting some electricity that would otherwise come from the grid, without requiring complex installation. The upfront financial cost of "plug-in solar" systems is generally far less than rooftop panels or ground-mounted arrays. Of course, once installed, the electricity generated is free to the consumer.

"Plug-in solar" helps address equity issues by being more accessible for a variety of households. This includes expanding access to renters, low- and moderate-income households, and residents of multifamily buildings. Moreover, as most states are experiencing rising electricity demand driven in large part by data centers and other large loads, small-scale distributed generation can help offset such demand growth. This can help reduce strain on the electricity grid at times of peak demand and help to reduce the emissions intensity of the grid.



Plug-in solar technology has seen widespread adoption internationally, particularly in Germany, where hundreds of thousands of such systems have been deployed as a low-cost, consumer-friendly form of distributed energy. Analysts attribute this growth to clear regulatory frameworks that treat these devices more like household appliances than traditional generation facilities.

II. Need for Legislation

In the United States, plug-in solar adoption has been limited in part by regulatory uncertainty and existing regulatory barriers. For example, interconnection and net-metering frameworks in many states were generally designed for much larger and permanently installed generation systems.

The interconnection process generally requires entities to enter into formal interconnection agreements before operating grid-connected electricity generation. This can be a lengthy and arduous process that involves applications, engineering reviews, and fees – all steps that should not be relevant for small plug-in solar systems. Rooftop or ground-mounted solar also requires hiring skilled workers to spend many hours installing the mountings, panels, and wiring. Similarly, net metering rules are generally designed for systems that may provide a meaningful amount of excess electricity to the grid. Plug-in solar systems, by contrast, are small in scale and are designed to provide electricity primarily for on-site consumption.

Overall, these types of requirements often impose lengthy procedural steps and significant cost barriers – which are simply not worth it at such a small scale. Yet, in many states, small plug-in solar systems could technically meet the definition of “generation” systems subject to interconnection or net metering requirements, or there may be regulatory uncertainty about how the law applies to this relatively new technology. As a result, many consumers — especially renters and residents of multifamily housing — lack access to distributed solar options.

A growing number of states have begun to address these barriers legislatively. For example, in 2025, Utah enacted the first statewide framework explicitly permitting plug-in solar devices under defined conditions, including capacity limits and safety certification requirements.¹ Similarly, in early 2026, Virginia advanced legislation establishing a regulatory pathway for such devices.² Notably, these bills often receive bipartisan support and many have passed unanimously. These and other state

¹ Utah H.B. 340 (2025).

² Virginia S.B. 250/H.B. 395 (2026). The Governor signed this into law in April 2026.



Model Climate Laws Initiative

legislative approaches generally exempt plug-in solar devices from any interconnection or net metering requirements otherwise imposed by a state or utility.³

III. Summary of Key Provisions in the Model Law

The Plug-In Solar Access and Safety Act would build on emerging examples to provide a clear, balanced framework to remove barriers and expand consumer access while maintaining appropriate safety standards.

a. *Section 2 – Legislating Findings and Purpose*

This Section sets forth the Legislature’s findings, including regarding the potential affordability, emission reduction, and electricity reliability benefits of plug-in solar. The Legislature also acknowledges the advantages of plug-in solar as compared to traditional distributed generation, as well as the existing barriers to adoption.

The Act’s purpose is articulated as increasing access to plug-in solar by removing barriers and ensuring device safety.

b. *Section 3 – Definitions*

The key definition is for the term “portable solar generation device” or “plug-in solar device” in paragraph (b). The definition sets forth several required elements for a system to qualify.

This includes a standard plug connection, as set forth in subparagraph (i), to distinguish from permanently wired systems. Moreover, there is an explicit capacity cap of 1,200 watts in subparagraph (ii), making clear that the Act does not apply to larger size systems. The definition also includes a requirement that the device be intended primarily for on-site electricity consumption.

These features mirror definitions included in other states. They will help avoid unintended consequences and ensure that the Act’s exemptions are limited to appropriate devices.

³ See, e.g., California S.B. 868 (2026); Hawaii S.B. 2902 (2026); Illinois H.B. 4516 (2025-26); Missouri H.B. 2444 (2026); New Hampshire S.B. 540 (2026); New York A.9111-B/S.8512-B (2026); Vermont S. 202 (2025-26); Washington S.B. 6050 (2026)



c. Section 4 – Exemptions from Certain Requirements

This Section serves to exempt qualifying devices from any net metering or interconnection agreements or requirements. This includes any requirements imposed by a utility.

States and utilities may have existing requirements for electricity generation in various sections of law, regulation, or utility commission orders. Similarly, existing statutory or regulatory provisions may be interpreted as imposing requirements on generation, which arguably could include plug-in solar. Given this, it is critical that the exemptions in the Act are explicitly stated as notwithstanding any provision of law to the contrary.

This Section reflects a policy determination that small-scale plug-in solar systems pose minimal impacts or risks to the electricity grid. Therefore, the systems do not warrant the full regulatory treatment required by larger-scale generation sources. These exemptions are generally central to state plug-in solar bills.

The voluntary opt-in provision in paragraph (a) preserves consumer flexibility for those who wish to enter into interconnection or net-metering agreements.

d. Section 5 – Provisions for Electric Corporations

Given the critical role of utilities and other electric corporations in providing electricity service to households, this Section establishes various guardrails on utility actions.

Paragraph (a) prohibits utilities from taking certain actions with respect to electricity customers who are installing or using plug-in solar devices. This includes requiring pre-approval from the utility, imposing a fee or charge, or requiring the installation of additional equipment.

Paragraph (b) limits any liability for the utility. Given that the Act serves to exempt plug-in solar from certain requirements that might otherwise apply, this provision clarifies that responsibility for device installation and operation rests with the customer, installer, or manufacturer, and not the utility.

These provisions in paragraph (a) and (b) mirror provisions in many other states.

Paragraph (c) allows a utility to require a simple notification process after installation. This is intended to ensure utilities may retain visibility into distributed resources while avoiding burdensome procedures for customers. After-the-fact notification-based



Model Climate Laws Initiative

requirements may be seen as a middle ground between full interconnection requirements and no utility oversight.

e. Section 6 – Safety Standards and Applicable Code Requirements

This Section ensures expanded access to plug-in solar does not compromise safety.

Paragraph (a) requires that systems be certified by a nationally recognized testing laboratory (e.g., UL). This is intended to align with federal and industry safety standards.

Paragraph (b) includes a so-called “anti-islanding” requirement. This requires that plug-in solar devices shut off automatically during system outages. This feature is standard in modern inverters to protect line workers and electrical grid integrity. It is generally included in all similar state bills.

Paragraph (c) directs the relevant authority to make any necessary updates to building, fire, and electrical codes. Updates should be required within an explicit and specified timeline, such as within one year of the Act’s enactment. Code updates must allow for installation and connection through a standard 110 volt electrical outlet and ensure safety. This paragraph is intended to ensure that any regulatory barriers are removed, create regulatory consistency, and facilitate installation and operation of plug-in solar systems.

f. Section 7 – Prohibition on Restrictive Covenants [OPTIONAL]

This Section may be included or excluded depending on a state’s preferences and the prevalence of restrictive private agreements. In some states, homeowners association rules, leases, or other private arrangements may seek to restrict or prohibit plug-in solar devices. This would have the effect of undermining the intended effects of the Act.

This provision is consistent with similar laws adopted in many states to prevent unreasonable restrictions on various types of renewable energy technologies. Including this Section would further expand access to plug-in solar devices, particularly for renters and residents of homeowners associations.

IV. Conclusions

The Plug-In Solar Access and Safety Act would serve to expand access to a new and emerging technology that has a variety of affordability, consumer choice, grid reliability, and emission reduction benefits. Facilitating the expansion of plug-in solar is a



Model Climate Laws Initiative

pragmatic and concrete step towards modernizing distributed energy policy and addressing climate change.

The Act would achieve these objectives by removing existing legal and regulatory barriers and ensuring the safety of plug-in solar systems. This includes exempting plug-in solar from interconnection and net-metering requirements, prohibiting utilities from imposing fees, approvals, or other requirements, and directing relevant code bodies to make building and fire code updates as needed. The Act draws on emerging legislative approaches in states across the country. Overall, the Act is designed to strike a balance between consumer access, regulatory clarity, and safety.